

PROCEEDINGS OF LEARNED SOCIETIES.

ZOOLOGICAL SOCIETY.

March 8, 1864.—D. J. E. Gray, F.R.S., in the Chair.

DESCRIPTION OF A NEW SPECIES OF STAUROTYPUS (S. SALVINII)
FROM GUATEMALA. BY DR. J. E. GRAY, F.R.S., ETC.

Among the interesting series of Tortoises brought by Mr. Salvin from Haumanchal, Guatemala, and deposited in the British Museum, are two specimens of a Tortoise of the genus *Staurotypus*, but differing from the normal form of that genus in the sternum being narrowed and acute in front, like the sternum of *Chelydra*, which genus it resembles in having a crested though short tail.

I would propose to divide the genus thus:—

A. *Sternum broad and truncated in front.* STAUROTYPUS.

1. STAUROTYPUS TRIPORCATUS, Gray, Cat. Shield Rept. B. M. 47, t. 20 b.

Hab. Mexico (*Wiegmann*); Vera Cruz (*Sallé*).

B. *Sternum narrow, tapering, acute in front.* STAUREMYS.

This subgenus has the form of the sternum and the crested tail of *Chelydra*, with the sternal shields of *Staurotypus*.

2. STAUROTYPUS (STAUREMYS) SALVINII.

Hab. Haumanchal, Guatemala (*Salvin*).

Head very large, swollen, crown covered with a thin soft skin; face conical, rather produced; nose terminal; mouth inferior; beak large, dentated on the edge; chin with two beards; throat warty; skin of body and limbs granular; the fore legs have several slender, very broad, arched, band-like shields across the inner side, the middle one being the broadest; toes well developed, strong; upper surface covered with a single series of band-like shields, united to the claws by a wide, well-developed web; claws 4—5, strong, elongate, acute; tail short, conical, angular above, with a central and lateral series of tubercles, forming three short crests; the thorax oblong, covered with three short, continuous keels; marginal shields rather narrow, elongate; sternum cross-like, small compared with the dorsal disk, narrow, slightly rounded before, acute behind, united to the dorsal disk by a narrow lateral process; sternal plates seven, thin, four pairs and a single odd one behind; the first pair elongate, longer than broad (probably the first two pairs of other *Emyde* united); the second pair broad, produced on the side, so as to cover the greater part of the cross-like sternum; the third pair elongate, narrow; the hinder plate rhombic, rather longer than broad, acute in front and behind; the axillary and inguinal plate large, covering the space between the outer lateral edge of the second pair of shields and the marginal plates. The front lobe of the sternum is very moveable at the suture between the first and second

pairs of sternal plates, in the young specimen, and has a considerable amount of mobility in the adult specimen.

The shell is brown; the head is dark olive; the temple and the side of the neck pale-marbled; underside of the limbs whitish.

Wagler represents the anal shields of *S. triporcatus* as divided. In the large specimen in the British Museum they are united into a single rhombic shield, as in *S. Salvini*.

REMARKS ON A SPECIES OF SHELL BELONGING TO THE FAMILY DENTALIIDÆ. BY W. BAIRD, M.D., F.L.S.; WITH NOTES ON THEIR USE BY THE NATIVES OF VANCOUVER'S ISLAND AND BRITISH COLUMBIA, BY J. K. LORD, F.Z.S.

Amongst the objects of natural history and ethnology brought from Vancouver's Island and British Columbia by Mr. Lord is a belt composed of numerous specimens of a species of *Dentalium* strung together. The species bears an exceedingly close resemblance to that described by Linnæus as *Dentalium entalis* (*Entalis vulgaris* of Risso and of Dr. Gray's 'Guide to Mollusca'), and appears to me, notwithstanding the difference of habitat, to be undistinguishable from that European species. It has, however, been described by the late Mr. Nuttall as *Dentalium pretiosum*; and a figure has been given of it by Mr. Sowerby in one of his late Numbers of the 'The-saurus Conchyliorum.'

From a careful comparison of the typical specimens of *D. pretiosum* in Mr. Cuming's collection, there can be no doubt of the identity of that species with the specimens brought by Mr. Lord from Vancouver's Island; those in Mr. Cuming's collection are said to be from California. In examining the old graves on the banks of the Columbia River, along with numerous other articles, such as human bones, flint instruments, &c., Mr. Lord found a number of specimens of a species of *Dentalium* considerably eroded and worn, which I have compared with some in Mr. Cuming's collection, and find identical with the *Dentalium striolatum* of Stimpson, from Newfoundland. I strongly suspect that both this species (*D. striolatum*) and *D. pretiosum* are only very slight varieties of the old Linnæan species *Dentalium entalis* (*Entalis vulgaris*). The habitats of all three (species?) are very different from each other; but, notwithstanding this, in the absence of distinct specific characters, I should hesitate very much in making distinct species of them. However that may be, the history of the specimens brought by Mr. Lord is very interesting; and these few observations must be considered only as introductory to the very instructive notes drawn up by that gentleman, a perusal of which will prove the best apology for these brief preliminary remarks.

Notes on the above, by Mr. J. K. Lord.

It is somewhat curious that these shells (*Entalis pretiosus*, Nuttall, sp.; *Entalis vulgaris*?) should have been employed as money by the Indians of North-West America—that is, by the native tribes inhabiting Vancouver's Island, Queen Charlotte's Island, and the

mainland coast from the Straits of Fuca to Sitka. Since the introduction of blankets by the Hudson's Bay Company, the use of these shells as a medium of purchase has to a great extent died out, the blankets having become the money, as it were, or the means by which everything is now reckoned and paid for by the savage. A slave, a canoe, or a squaw is worth in these days so many blankets; but it used to be so many strings of *Dentalia*. In the interior, east of the Cascade Mountains, the Beaver-skin is the article by which everything is reckoned—in fact, the money of the inland Indian.

The value of the *Dentalium* depends upon its length: those representing the greater value are called, when strung together end to end, a "Hi-qua;" but the standard by which the *Dentalium* is calculated to be fit for a "Hi-qua" is, that twenty-five shells placed end to end must make a fathom, or six feet, in length. At one time a "Hi-qua" would purchase a male slave, equal in value to fifty blankets, or about £50 sterling. The shorter and defective shells are strung together in various lengths, and are called "Kop-kops." About forty "Kop-kops" equal a "Hi-qua" in value. These strings of *Dentalia* are usually the stakes gambled for.

The shells are generally procured from the west side of Vancouver's Island, and towards its northern end; they live in the soft sand, in the snug bays and harbours that abound along the west coast of the island, in water from three to five fathoms in depth. The habit of the *Dentalium* is to bury itself in the sand, the small end of the shell being invariably downwards, and the large end close to the surface, thus allowing the fish to protrude its feeding- and breathing-organs. This position the wily savage has turned to good account, and has adopted a most ingenious mode of capturing the much-prized shell. He arms himself with a long spear, the haft made of light deal, to the end of which is fastened a strip of wood placed transversely, but driven full of teeth made of bone, resembling exactly a long comb with the teeth very wide apart. A squaw sits in the stern of the canoe and paddles it slowly along, whilst the Indian with the spear stands in the bow. He now stabs this comb-like affair into the sand at the bottom of the water, and after giving two or three stabs draws it up to look at it; if he has been successful, perhaps four or five *Dentalia* have been impaled on the teeth of the spear. It is a very ingenious mode of procuring them, for it would be quite impracticable either to dredge or net them out; and they are never, as far as I know, found between tide-marks.

At one period, perhaps a remote one, in the history of the inland Indians these *Dentalia* were worn as ornaments. I have often found them mixed with stone beads and small bits of the nacre of the *Haliotis*, of an irregular shape, but with a small hole drilled through each piece, in the old graves about Walla-walla and Colville. In all probability, these ornaments were traded from the coast Indians; but, as these graves were quite a thousand miles from the sea, it is pretty clear the inland and coast Indians must have had some means of communication.

March 22, 1864.—Dr. J. E. Gray, F.R.S., in the Chair.

NOTES ON THE *DIDUNCULUS STRIGIROSTRIS*, OR TOOTH-BILLED PIGEON. BY DR. GEORGE BENNETT.

Having fortunately obtained by purchase a living pair of those singular and rare birds, the Tooth-billed Pigeon (*Didunculus strigirostris*), which had been brought from the Samoan or Navigators' Islands to Sydney, New South Wales, an opportunity has been afforded to me of attentively watching their habits in captivity. To guard against the event also of these valuable birds dying, I availed myself of the services of Mr. C. Thomas, who made an accurate drawing of them from life in their most natural attitudes; and his drawing conveys an excellent idea of the peculiar expression of these remarkable birds when alive. I have sent a tracing of this drawing for insertion in the 'Illustrated London News;' and should the bird now on its way to England die, I shall be able to send the Society an accurate coloured representation of the living birds. The *Didunculus*, like the Dodo, has a very limited range, having only been found inhabiting the Samoan or Navigators' Islands. In the contour of the bill, the form and position of the nostrils, and several other characters, the *Didunculus* differs from any other living species at present known; and, although a smaller bird in size, it approximates the nearest in all its characters to the extinct Dodo, and, like it, combines the character of a rapacious bird with that of the harmless Pigeon. The Dodo also inhabited a very limited space of land, as the remains of that bird and allied genera have only been found on the small islands of the Mauritius, Bourbon, and Rodriguez. The *Didunculus* may therefore be regarded as the nearest living ally of the extinct Dodo. Although the mandibles of the *Didunculus* are powerful in structure, yet the beak is never used as an offensive weapon; for when the hand is placed in the cage, or the bird is seized for removal from one cage to another, it never attempts to bite the aggressor, but, on the contrary, is so timid, that after fluttering about or running into a dark corner of the cage in its efforts to escape, it soon becomes subdued and is easily taken.

In all the families of Pigeons a diversity in the form of the beak is found. In the Fruit-eating Pigeon the beak is stronger, stouter, and the corneous portion is strongly arched and compressed, bearing a great resemblance to the structure in certain rapacious birds; and this form of beak is carried to the greatest extent in the *Didunculus*, yet the living birds in captivity were never observed to crush hard seeds or nuts. They would nibble into minute bits the seeds of loquats, almonds, and hemp-seed, with the same action as observed in the Parrot tribe when feeding. When I first had the birds, boiled potatoes and stale bread formed their diet. The boiled potatoes were torn and swallowed in large pieces at a time, being soft; but the stale bread they would place their feet upon and tear with the hooked beak into small bits. A piece of apple was also eaten; but the bananas placed in the cage were never touched, although it is said that in a wild state they live on berries, and are very fond of the

mountain-plantain. Both the birds were regularly fed twice daily—early in the morning and about four in the afternoon. It was supposed at one time that these birds did not drink water; but I soon found that this assertion was incorrect.

It was early in June 1863 that the first *Didunculus* arrived at Sydney; and on the 15th of that month and following days I examined the bird, which I found in good health, very timid, and a young bird in immature plumage, and the teeth of the lower mandibles not yet developed. It was about the size of the Nicobar Pigeon, but rounder and more plump in form. It kept steadily looking at me during the time I was examining it, uttering occasionally a plaintive *coo, coo, coo*, or *goo, goo, goo*. This bird had been captured on the island of Upolu, not more than five miles from the settlement of Apia, by a native. It has now been in captivity for some time, and is considered to be at this time (January 1864) two years old. It has attained the full plumage of the adult bird, and the teeth of the lower mandibles are also fully developed. When any one approaches the cage, it will sometimes retire to an obscure corner, and at other times will remain quiet on the perch, watching attentively every movement of the spectator, and occasionally changing its position. It invariably feeds in the light, but will not do so if any one is present; the only opportunity we had of observing its mode of feeding was through the window, when the bird was placed in the verandah of the house, when we could watch its actions without being seen by the bird. It usually kept on the low perch, but when disturbed would sometimes jump on the ground, run rapidly about, and then take refuge in the darkest part of the cage. In its physiognomy it is a stupid-looking bird, with, at the same time, a remarkable peculiarity of expression, which the artist has succeeded in obtaining. The bird has nothing particular in its plumage to attract the attention of the common observer; but the head of a rapacious bird on the body of a Pigeon would excite the attention of the most ordinary spectator. The plumage of this bird is of a chocolate-red colour, deeper on the back, tail, and the primaries and secondaries of the wings, and barred over the breast, throat, and wing-coverts with light brown. The upper part of the head is rather bare of feathers, but those remaining are of a dark slate-colour. The base of the beak is of an orange-red, and the rest of the mandibles yellowish. The legs and feet are of a bright orange-red. The cere round the eyes is of a flesh-colour. The irides are of a dark reddish brown. The form of the beak and the bright eyes impart to the bird very much the character of a rapacious bird. The above is the state of the plumage in the young bird.

On the 24th of July another *Didunculus* was brought to Sydney from the Island of Savaii (one of the largest and most mountainous of the Navigators' group). I found it was a full-grown bird in adult plumage, with the teeth of the lower mandible well developed; the head, neck, breast, and upper part of the back was of a greenish black; back, wings, tail, and under tail-coverts of a chocolate-red. The legs and feet were of a bright scarlet. The mandibles

are of a bright orange-red, shaded off near the tip with very light yellow. The cere around the eyes is also of a bright orange-red colour; the irides brownish black. I was informed that these birds are nearly extinct, from having been formerly eaten by the natives in great numbers, and of late years from being destroyed by wild cats; and it is said that most of the Ground-Pigeons are following the fate of the *Didunculus*, from the same causes. Indeed, from my observation of the living birds, they are very timid and stupid. On the following day I examined the birds together. They are both moulting; and the young bird has grown very much since I last saw it, and is now larger in size than the adult specimen recently arrived. As there is no sexual distinction in the plumage, it is probable that size may be a distinguishing mark of the sexes; and if so, these birds may prove to be male and female. On the 21st of August I completed my purchase of these birds for a very high price. I must thank the Council of the Acclimatization Societies of Sydney and Melbourne for the liberal resolutions passed by them to unite with me in the purchase of these rare birds, on account of the very high sum demanded for them, and to join with me in presenting them to the Zoological Society of London; but, on mature reflection, considering the casualties to which they would be liable, I considered it would be more satisfactory to take upon myself the sole responsibility and expense. The adult bird often runs wildly about the cage, flapping its wings, and, when the door is open to receive food, makes every effort to escape. These birds run with great rapidity, elongating the body and depressing the head, and in the action of running resemble the Grouse. On the 12th of September the older bird refused food, which continued to the morning of the 14th of September, when several fits carried it off in the course of the day. I placed the bird entire in spirits, to enable a complete anatomical description of this bird to be given by my distinguished friend Professor Owen. The young bird seems tamer and more lively since the death of its companion; it is probable the old bird being so wild terrified it. I observed a quantity of white powder (epithelium) about the cage lately, and also discolouring the water; it resembled the same kind of powder often observed from the White Cockatoos. On the 4th of October the bird did not feed well; so we gave it some loquats (*Eriobotrya japonica*), a fruit naturalized and abundant in New South Wales. The bird enjoyed the change; it did not devour the pulp, but picked out the seeds, and cracked them into minute bits; what portion was eaten I could not ascertain, but a pint of loquats was used daily in this way, as well as occasionally a little boiled potato. On the 7th of October the *Didunculus* was in excellent health, and the plumage is very much changed, as the head, neck, and breast are now of a slate-colour tinged with dark bottle-green. The bill has become of a bright orange-red, and the legs are nearly a bright scarlet colour: the bird has evidently assumed the adult plumage. When the bird is seen, and does not perceive the observer, it leaps from the perch, runs about the cage, and then commences feeding; but on a visitor approaching, it again takes to the perch, and remains watching

the intruder, giving deep guttural growls, followed afterwards by a vibration of the whole body from the head to the tail, uttering at the same time its plaintive notes of *goo, goo, goo*, repeated in quick succession. On the 23rd of October, the bird looks well; it has not eaten for the last two days, but has taken a large quantity of gravel. We find the bird requires a large supply of that material for the purpose of aiding digestion. As it was considered the loquat-seeds might have disagreed with the bird, they were discontinued. On the 25th it appeared worse; and fearing it might die, I placed it in a Parrot-cage to enable the artist to finish the drawing from life, as in a cage of that description he could have a good view of the plumage, &c., over every part of the bird; when, to our great surprise, it jumped from the perch to the bottom of the cage and commenced eating what, on examination, was found to be hemp-seed; and from that time it has been fed on that kind of food. It soon regained its usual health, the diet of hemp-seed being occasionally diversified by some bleached almonds; stale bread is also placed in the cage, but it eats but very little, if any, of it. This circumstance points out the difficulty of arranging a diet for a bird with whose habits we are unacquainted, as at one time it thrives well upon a certain diet, on a sudden appears to be dying, and then becomes in good health from a change of food accidentally discovered, as in this instance. Since then, the *Didunculus* has continued in most excellent health; and has now just been placed on board the ship 'La Hogue,' Captain Williams, under the care of Mr. Broughton, the steward, from whose experience in the management of birds there is every chance of this rare bird arriving safe at its destination in the Gardens of the Zoological Society in the Regent's Park. 'La Hogue' sailed from Sydney early on the morning of the 12th of January, 1864.

The whole of the time the bird was in my possession it never became domesticated, nor evinced the slightest attachment to the lady who daily fed it: it was the same to her as to strangers; and I do not consider the *Didunculus* a bird that will be readily domesticated or reconciled to captivity. For some period of time this bird would be very tame comparatively, and then, without any apparent cause to account for the change, would become very wild. At that time the cleaning of the cage was attended with some difficulty, from its violent fluttering on any one approaching for the purpose, in which it evinced no little power of wing.

ON A NEW SPECIES OF SMITHORNIS. BY GEORGE ROBERT GRAY, F.L.S., ETC.

I beg to call the attention of the Society to a new species of bird belonging to the interesting genus *Smithornis*, which was established by the late Prince Bonaparte on the *Platyrhynchus capensis* of Sir A. Smith.

It is characterized as follows, under the name of

SMITHORNIS RUFOLATERALIS, sp. nov.

Head and occiput deep black; lores white; nape with a narrow

collar of orange-brown ; back black, varied with white and orange-brown ; scapulars and upper tail-coverts orange-brown ; wing-coverts black, tipped with white ; beneath the body white, but with the breast and sides of abdomen more or less streaked with narrow stripes of black along the shaft of each feather ; each side of the breast with a patch of pale rusty colour. Upper mandible black, lower one yellow ; feet pale horn-colour.

Length 4" 6''' ; wings 2" 4'''.

This bird differs from the typical and only hitherto known species *Smithornis capensis* (Smith) in being of a smaller size, and in possessing a greater variety of colours.

The British Museum possesses, through Mr. Gould, a single specimen of *S. rufolateralis*, which was stated to have been brought from West Africa ; but the exact locality is unknown.

ON A POISON-ORGAN IN A GENUS OF BATRACHOID FISHES.

BY DR. ALBERT GÜNTHER.

Many fishes are known which, provided with long, bony, and sometimes serrated spines, are justly feared on account of the dangerous wounds they inflict. The Sting-Rays, many Siluroids, and some scaly fishes, like the Weevers, are thus armed. Although the effects ascribed to such wounds have doubtless been exaggerated in many cases, natives and fishermen, as well as travellers, agree in the belief that some poison must be communicated. However, with the exception of a single instance, viz. that of the Weevers*, comparative anatomists have never pointed out a trace of an organ secreting or conducting a poisonous substance ; and consequently the poisonous nature of the wound has been doubted, the worst cases being explained by the mechanical effect of a serrated spine, by the influence of the climate, or by the peculiarity of the constitution. Thus in all the hand-books of comparative anatomy the presence of a poison-organ in the class of fishes is denied, and even Bleeker† (than whom no naturalist has had better opportunities of observing such fishes during life) expressly says that they were unjustly reputed poisonous.

* Dr. J. E. Gray has directed my attention to a paper by Mr. Byerley, contained in the Proceedings of the Literary and Philosophical Society of Liverpool, No. 5, 1849, p. 156. In this paper Mr. Byerley demonstrates, in the most convincing manner, that the double-grooved opercular and dorsal spines of the Weevers are poison-organs. Although the structure of the spines, with their external grooves, were known to previous writers, it is Mr. Byerley's merit to have shown the presence of a cavity within the substance of the spines which is the proper depository of the poison before its ejection. But, at present, I cannot agree with him that the body found in the cavity and in the groove is a gland ; it appears to me that what he considered to be a gland was the poisonous fluid itself, coagulated and hardened by the action of the spirits in which the specimens had been immersed in order to render "the gland more opaque and denser." I formed this opinion from examinations of specimens of *Trachinus draco* as well as of *T. vipera*, which, however, had been in spirits for a considerable period. Nevertheless there is no doubt that the poison-apparatus of *Trachinus* is homologous with that of *Thalassophryne*, only in the latter it is developed to as great a perfection as in the fang of a viper.

† Atl. Ichthyol. Silur. p. 21.

On the other hand, I have heard of so many positive facts from highly educated travellers and excellent observers (some of whom, being medical men, had treated cases of this nature), that it appeared to me necessary to give every attention to this subject. Especially it seemed probable that a sac with a more or less wide opening in the axil of the pectoral fin of many Siluroid and of some other fishes would contain a fluid which might be introduced into a wound by means of the pectoral spine, which would be covered with it, like the barbed arrow-head of a bushman.

Whether this secretion is equally poisonous in all the species which are provided with that axillary sac is a question which can only be decided by experiments made in the tropics; but I can hardly doubt its poisonous nature, after discovering in a genus of fish a poison-organ which structurally is the same as in the venomous snakes. This genus, belonging to the family of Batrachidæ, was described by me in the Catal. Fish. iii. p. 174, with a single species, *Thalassophryne maculosa*. The typical specimen being small and having been in spirits for a long time, I did not observe the openings in the venom-spines, although I now perceive them to be present, as in the second species found by Messrs. Dow and Salvin, which I have described (in P.Z.S. 1864, p. 150) as *Thalassophryne reticulata*. The specimen is 10½ inches long.

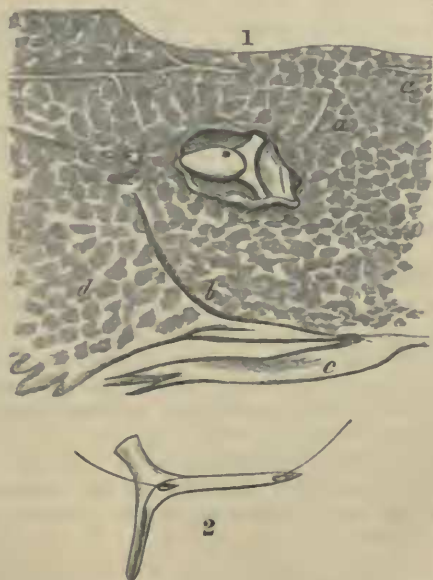


Fig. 1. Hinder half of the head, with the venom-sac of the opercular apparatus *in situ*. * Place where the small opening in the sac has been observed. *a*. Lateral line and its branches. *b*. Gill-opening. *c*. Ventral fin. *d*. Base of pectoral fin. *e*. Base of dorsal fin.

Fig. 2. Operculum, with the perforated spine.

The structure of the poison-organ is as follows:—

1. *The opercular part.*—The operculum is very narrow, vertically styliform, and very mobile; it is armed behind with a spine, eight lines long, and of the same form as the venom-fang of a snake; it is, however, somewhat less curved, being only slightly bent upwards; it has a longish slit at the outer side of its extremity, which leads into a canal perfectly closed, and running along the whole length of its interior; a bristle introduced into the canal reappears through another opening at the base of the spine, entering into a sac situated on the opercle and along the basal half of the spine; the sac is of an oblong-ovate shape, and about double the size of an oat-grain. Though the specimen had been preserved in spirits for about nine months, it still contained a whitish substance of the consistency of thick cream, which on the slightest pressure freely flowed from the opening in the extremity of the spine. On the other hand, the sac could be easily filled with air or fluid from the foramen of the spine.

No gland could be discovered in the immediate neighbourhood of the sac; but on a more careful inspection I found a minute tube floating free in the sac, whilst on the left-hand side there is only a small opening instead of the tube. The attempts to introduce a bristle into this opening for any distance failed, as it appears to lead into the interior of the basal portion of the operculum, to which the sac firmly adheres at this spot.

2. *The dorsal part* is composed of the two dorsal spines, each of which is 10 lines long. The whole arrangement is the same as in the opercular spines; their slit is at the front side of the point; each has a separate sac, which occupies the front of the basal portion; the contents were the same as in the opercular sacs, but in somewhat greater quantity. A strong branch of the lateral line ascends to the immediate neighbourhood of their base.

Thus we have four poison-spines, each with a sac at its base; the walls of the sacs are thin, composed of a fibrous membrane, the interior of which is coated over with mucosa. There are no secretory glands imbedded between these membranes, and these sacs are merely the reservoirs in which the fluid secreted accumulates. The absence of a secretory organ in the immediate neighbourhood of the reservoirs (an organ the size of which would be in accordance with the quantity of the fluid secreted), the diversity of the osseous spines which have been modified into poison-organs, and the actual communication indicated by the foramen in the sac lead me to the opinion that the organ of secretion is either that system of muciferous channels which is found in nearly the whole class of fishes, and the secretion of which has poisonous qualities in a few of them, or at least an independent portion of it*.

The sacs are without an external muscular layer, and situated immediately below the loose thick skin which envelopes the spines to their extremity; the ejection of the poison into a living animal, therefore,

* This, of course, must be demonstrated by further preparations; for I would not sacrifice the single (typical) specimen, the less as we may confidently hope that Capt. Dow will furnish us with ample materials before long.

can only be effected by the pressure to which the sac is subjected the moment the spine enters another body.

Nobody will suppose that a complicated apparatus like the one described can be intended for conveying an innocuous substance, and therefore I have not hesitated to designate it as poisonous; and the greatest importance must be attached to it, inasmuch as it assists us in our inquiries into the nature of the functions of the muciferous system, the idea of its being a secretory organ having lately been superseded by the notion that it serves merely as a stratum for the distribution of peripheric nerves. Also the objection that the Sting-Rays and many Siluroid fishes are not poisonous, because they have no poison-organ, cannot be maintained, although the organs conveying their poison are neither so well adapted for this purpose nor in such a perfect connexion with the secretory mucous system as in *Thalassophryne*.

Finally, I have to add that neither *Batrachus* nor *Porichthys* has the spines perforated, and also that in *Thalassophryne* the poison-organ serves merely as a weapon of defence. All the Batrachoids with obtuse teeth on the palate and in the lower jaw feed on Mollusca and Crustaceans.

MISCELLANEOUS.

On the Naturalization of the White Hare in Faroe.

To Dr. J. E. Gray, F.R.S. &c.

MY DEAR SIR,—The enclosed extract from a letter from my friend Mr. Müller, of Faroe (member of the Danish parliament), will explain my object in sending you one of the specimens of *Lepus variabilis*? which he mentions.

It seems a very successful case of naturalization: the species, of course, did not need acclimatizing.

Yours very truly,

W. C. TREVELYAN.

Wallington, Newcastle-on-Tyne,
Nov. 9, 1864.

“In 1854 or 1855, two pairs of Hares were introduced into Stromøe (Faroe) from Norway: they have increased so rapidly that there are thousands now in the island. One may shoot twenty in a day upon the hills, and it will be impossible to exterminate them.

“I have tried several times to import the Ptarmigan from Iceland, but hitherto without success. It appears that they cannot live more than two or three days when captured. Eggs have proved unsuccessful, too, the greater part having been sat upon.”

Description of Lophogaster typicus. By M. SARS.

At the present day zoologists devote their attention especially to those exceptional forms which serve to unite groups otherwise distinct. These forms, which at one time were regarded as embarrassing